



Lesson 1: Meet Spark!

The DJI Spark is a mini drone featuring advanced technologies such as intelligent flight controls, a mechanical gimbal, and a camera with photo and video capabilities. Do some research...what is the weight & flight time?

Can you discover more specs about Spark?



B4UFLY

DOWNLOAD THE FAA'S FREE APP TO DETERMINE WHETHER THERE ARE ANY RESTRICTIONS OR REQUIREMENTS IN PLACE AT THE LOCATION WHERE YOU PLAN TO FLY!

Safety...

The Federal Aviation Administration (FAA) sets rules and regulations to provide the safest, most efficient aerospace system in the world for Unmanned Aerial Vehicles (UAVs), or drones. These guidelines are in place to engage in safe and responsible flying, while protecting the privilege of flying UAVs. Encourage students to research these guidelines and present informative texts or discussion to build knowledge and understanding of this topic. The educator will act as a facilitator, guiding students to gain a deep understanding of this topic, while encouraging them to think in depth about the importance of safety guidelines, laws, and regulations.

SENSORS

- Gyroscope
- Accelerometer
- Compass
- Infrared Sensor
- ZMP 1/2.3" CMOS Image Chip for Camera
- Obstacle avoidance Up To 16 ft Ahead



When might sensors cause difficulty in flight?

FUNCTIONS

- Flight Time 16 minutes
- Speed 50km/h
- Mechanical Gimbal
- Video 1080/30p
- Micro SD card slot
- Vision System
- Obstacle Detection
- Gesture Control
- Micro USB port

GET TO KNOW YOUR FLIGHT MODES:

- P MODE (POSITIONING)
- ATTI MODE (ALTITUDE)
- S MODE (SPORT)



What purpose do each of the functions serve?

INDOOR FLIGHT

The Spark uses a Vision Positioning System (VPS) to fly indoors and does not require GPS.

TIPS for SUCCESS:

- VPS requires a well-lit area and a good textured flooring to properly function.
- Always set Return to Home (RTH) correctly for indoor use. RTH should set automatically and will bring your aircraft back to its last recorded home point.
- Metal objects or concrete may cause compass or connectivity issues.
- Use Propeller Guards to avoid damage to your Spark or anything that may come into contact.
- For best performance, use P Mode indoors. If you do receive a GPS signal, your flight should not be interrupted. However, if your Spark enters Atti Mode, movements may become too quick and exaggerated, increasing chances of crashing indoors.
- Having trouble? Try Tripod Mode, Beginner Mode, or decrease your Spark's sensitivity.

Controlling Flight...

REMOTE CONTROL

- Remote Control (RC) ON > Spark ON > Connect Device to WiFi > Hold Spark Power: 3 Seconds > Launch DJI Go 4 > Fly!

HAND GESTURES

- Spark ON > Double-Tap Power > Allow To Recognize Your Face > Launch from Palm

MOBILE DEVICE

- Press Spark Power Button 6 seconds
- Open Device WIFI Settings > Select SSID (Ex: "Spark-RC-XXXXXX") > Open DJI Go 4 > Fly!

THE SPARK WIFI SSID & PASSWORD IS DISPLAYED ON THE CARRY-OUT AND INSIDE THE BATTERY COMPARTMENT

WHAT IS GPS?

It could take days to explain the complexity and awesomeness of how GPS works. The most basic explanation is: GPS is the complete network of satellites, a control station on Earth that manages these satellites, and the receiving device you carry with you. Each satellite is constantly sending out a radio-wave signal toward Earth. The receiver "listens" for these signals and attempts to connect signals from three or four different satellites, determining your precise location, including altitude!

How does this happen? The satellites stay in fixed positions while the signals travel at the speed of light. Each signal includes information about the satellite it connected with and a time-stamp that records when the signal left the satellite. Because signals are radio waves, they must travel at 299,792,458 meters per second, which is the speed of light! By recording when each signal arrives, the receiver figures the amount of travel time (and distance) from the sending satellite. With three or four signals, the receiver determines exactly where it is located on Earth. The Spark can see one 10 satellites for very precise positioning.

Explore Global Positioning researching these terms!

Triangulation • Trilateration • Calculating Distance



Where might you encounter the following systems?

IRNSS • GNSS • Compass • satnav • GLONASS